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CALIFORNIA BIRDS



Vol.3, No.1, 1972

CALIFORNIA BIRDS

Journal of California Field Ornithologists

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Volume 3, Number 1, 1972

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DO BIRDS FLOCK IN HAWAII, A LAND WITHOUT PREDATORS?

Edwin O. Willis

Birds of a feather sometimes flock together, as anyone knows who has ever seen blackbirds or sandpipers in fall. More surprisingly, in many parts of the world birds of different feathers flock together. H. W. Bates (1863), in his classic "Naturalist on the River Amazons," reports how the empty forest seemed to come alive with dozens of kinds of birds whenever one of the diverse Amazonian "mixed flocks" passed by. Less spectacular but similar mixed flocks of Plain Titmice, Hutton's Vireos, and other birds can be seen in California oak woodland. Those who watch for mixed flocks will be surprised how common they are, from migrant warblers among Common Bushtits in chaparral to Cactus Wrens among Black-throated Sparrows on the desert.

Some mixed flocks gather for obvious reasons, such as the gulls one sees at garbage dumps or the flocks of birds that follow army ants for flushed insects in tropical America. The birds in most complex flocks, however, seem to congregate and follow each other without obvious reasons. Probably no biologist can say what a warbler gains by following Bushtits about, although many biologists nowadays are studying mixed flocks. Reasons suggested for mixed flocks mostly fall in two categories. Perhaps the birds lead each other to food, or avoid competing for food, by watching each other. Perhaps the birds avoid predation by associating with each other.

One bird I studied in Panama, the small Spotted Antbird (*Hylophylax naevioides*), definitely spent less time calling or fleeing nervously when it associated with birds of other species (Willis, in press). This gave it the opportunity to stare at the ground to forage. Calif. Birds 3:1-8, 1972

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Presumably, if there were no predators there would be no reason for such birds as Spotted Antbirds to join other species; they could forage as they pleased without keeping near other alert birds. Mixed flocks bound together by wariness would be absent; flocks would be associated with feeding opportunities only.

Birds in an area without predators could form a natural experiment. If flocks like those of the Vireo and the Titmouse existed in such an area, it would be likely that these mixed flocks do form for food reasons alone. Birds and other organisms in places without predators lose their defensive mechanisms rapidly. Island birds are notably fearless, and plants on Hawaii seldom have spines or poisons (Carlquist, 1970). Warner (1968) found Hawaiian honeycreepers do not sleep with their heads in their back feathers, and are therefore easy prey for introduced mosquitoes.

The problem is, it is rare to find a place without predators. It is especially difficult to find such a place with many species of birds, so that one can get mixed flocks. The natural experiment, however, has been performed on certain oceanic archipelagos that have few or no predators. As Darwin found during the voyage of the Beagle, the isolated archipelago of the Galapagos has many species of finches but hardly any native predators. However, there are many somewhat predatory lizards on the Galapagos.

Evolution on the Hawaiian Islands has produced a group of land birds as diverse as the Darwin's Finches, in a land almost without predators. There are open-country Hawaiian Hawks (*Buteo solitarius*) on the island of Hawaii and Short-eared Owls (*Asio flammeus*) on all islands, but no predatory native mammals or reptiles. Unless the hawk and owl fed on insects and nestlings, they may have come to Hawaii as new immigrants after the Polynesians introduced rats; they seldom eat adult birds. If there were mixed flocks of the diverse native Hawaiian birds, they surely could not be caused by predation except perhaps on the island of Hawaii itself.

The Drepanididae, or Hawaiian honeycreepers, are a fascinatingly diverse group of birds. Having evolved from one or two original kinds of birds, so far back that nobody now knows whether they were tropical honeycreepers or Northern finches, the many types of drepanidids now possess the widest variety of types of bills in any bird family. There are small warblerlike ones with straight bills (the Anianiau, *Loxops parva*) or slightly decurved ones (the Amakihi, *Loxops virens*), others with vireolike bills (the Creeper, *Loxops maculata*, of the forest undergrowth, and the Akepa, *Loxops*

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coccinea, of the leafy tree crowns) and finally strange rare creatures with downcurved bills over 2 inches in length (the Akaialoa, *Hemignathus procerus*). One, the Akiapolaau (*Hemignathus wilsoni*), has a short, straight lower mandible that it uses to flake bark off trunks with woodpeckerlike hammering, while its long downcurved upper mandible probes for insects in crevices. The related Nukupuu (*Hemignathus lucidus*) differs mainly in having the short lower mandible downcurved. Related birds, mostly the size of large sparrows, had thick finchlike bills or even parrotlike ones to crack seeds or tear open twigs. Regrettably, most finchlike birds except the Palila (*Psittirostra bailleui*) are now rare or extinct.

Another line, mostly extinct now with the exception of the common red Apapane (*Himatione sanguinea*) with its short, slightly decurved bill and the fairly common red and black Iiwi (*Vestiaria coccinea*) with its long downcurved bill, adds to the diversity of the native Hawaiian avifauna. In addition, there are a little native flycatcher, the Elepaio (*Chasiempis sandwichensis*), two native thrushes (including the Omao, *Phaeornis obscura*), and numerous introduced birds. The avifauna is certainly diverse enough that mixed flocks could form, although the native birds have suffered greatly and many are now rare or extinct. Introduced mosquitoes brought them introduced diseases (Warner, 1968), introduced ants killed insects they fed on (Zimmerman, 1970), and the original forests were reduced to a quarter their original extent (Carlquist, 1970).

G. C. Munro, one of the collectors at the turn of the century, saw the native Hawaiian birds during their horrible decline. In 1944, he recorded his memories and field notes of half a century on the islands. On Kauai, he reports, the Creeper formed small flocks with Akepas. The constant chipping of the Creeper attracted other birds. To find certain rare species, such as the Nukupuu, he followed the chipping of the Creeper. Since there were no native predators on Kauai other than Short-eared Owls, Munro's report interested me greatly. Richardson and Bowles (1964:29) reported Anianiau often forage together with Amakihi. It seemed that there might indeed be mixed flocks on Hawaii in the absence of predators.

However, one must be cautious of reports of mixed flocks. Even birds that ignore each other occasionally come in contact, and an observer who comes up at that moment will think the birds are associating. Sometimes birds mobbing an observer will attract other species. One needs to watch critically to see if birds actually follow each other.

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Thus, when my wife Yoshika and I went to Hawaii, I looked for mixed flocks. I quickly found that some of the other things I looked for, such as rare or reportedly extinct birds, were very hard to find. As Berger (1970) reports, bird study on Hawaii is very difficult for a variety of reasons. Many of the native birds are so rare or restricted to undisturbed forests that a major expedition is needed to hunt them down. I tried hiking in to some such places, such as a 10-mile mountain climb to the upper Kipahulu Valley on the east side of the extinct volcano Haleakala on the island of Maui; but I found that I had only three or four hours of birding before I had to start hiking back. Naturally, I missed the rare species.

However, if one gets to relatively undisturbed forests above 1000 meters elevation, he finds that the remaining native birds of Hawaii are often remarkably common and far outnumber the introduced birds in some areas. On our first day on Hawaii, in the forests of ohia trees and tree-ferns along Kilauea Crater, it seemed that every other treetop had its Apapane or two, every fifth tree a tail-flicking little Amakihi. These are the two commonest surviving honeycreepers, common on all the larger Hawaiian islands from the last scrubby ohias in the crater of Haleakala down to the slopes above Honolulu.

From Kilauea, we went to cabins at Pohakuloa State Recreation Area in the dry saddle between the massive volcanoes of Mauna Kea and Mauna Loa. In the dry scrub and eucalyptus, House Finches, House Sparrows and California Quail outnumbered native birds. The pretty little Red-billed Leiothrix (*Leiothrix lutea*) were in flocks of up to 10 birds, and I watched small groups of introduced White-eyes (*Zosterops palpebrosus*) and a few Amakihi follow one such flock. There were many White-eyes and Amakihi away from this mixed flock, however.

From Pohakuloa, I drove up on the slopes of Mauna Kea to what proved the best birding area on the "Big Island" of Hawaii. This was the scrubby, low grassy woodland of mamane and naio trees at Andrew Berger's study area above Puu Ulaau cabin. Here, Elepaio flitted from bush to bush, Amakihi were more common than Elepaio, crimson Apapane and Iiwi paraded from treetop to flowering treetop, and Palila whistled from a few of the mamane trees. The scolding of a few Leiothrix, almost the only introduced birds besides the common White-eyes and grass-dwelling Skylarks, brought in the most exciting bird--a bright yellow Akiapolaau with its absurdly shaped bill, to tap on branches inside a mamane near me and then to perch near me as I squeaked and drew in curious Amakihi from all

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directions. One feels sad that this forest is gradually dying, mainly from overgrazing by feral sheep and goats that are protected for Hawaiian hunters. There are still many native birds, but I still had not seen a mixed flock. The Iiwi and Apapane concentrated in flowering trees, but that was all.

Akipuka, an island of tall ohia and other trees amid the lava flows at Mile 22 from Hilo, was another exciting area near Pohakuloa. On a foggy afternoon, it was bursting with the strange songs of Omao and Iiwi. The weird chirps of Apapane came from the treetops, and Amakihi and Elepaio flitted lower. The birds still crisscrossed without forming mixed flocks, however. Even though there is a hawk on the Big Island, we left with the impression that only introduced birds - ones whose ancestors recently fled hawks and other predators - formed mixed flocks.

On Maui, I hiked up over the rim of Haleakala Crater from the few ohia trees at Paliku Cabin, then down through grassland on the north side of the volcano before dropping down into the cloud forest of the rugged upper Kipahulu Valley. Here I finally found Creepers, or rather families of them found and chipped busily at me. There were Amakihi, Apapane, and Iiwi all over the place, but no mixed flocks, in the cluttered tree-ferns and lichens and gnarled ohia trees. On the way back down Kaupo Gap, I saw a few birds but no flocks in the dry scrub and streamside koa forests.

We birded little on Oahu, except for introduced birds in the lower Makiki Valley at Honolulu. We saved three days for the highlands of Kauai, a forested plateau which everybody agreed is the best place for native birds on the islands. At our cabins at Kokee State Park there were many introduced trees among the native koas, but native birds still outnumbered introduced White-eyes, Hwa-Meis (*Garrulax canorus*), and Cardinals (*Richmondia cardinalis*). To the usual Elepaio, Amakihi, Apapane and Iiwi the little yellow Anianiau added variety. There were plenty of birds, but no definite flocks. Yoshika saw one group in which Apapane and Amakihi seemed to associate with Elepaio, however.

To see other native birds we went up past the Kaumahina Lookouts, where the rain-drenched forests of the Alakai Swamp spill over into the huge canyons and wrinkled cliffs of the western wall of Kauai. On the rainy first day we found Akepa as well as the four commoner drepanidids along the divide, and were interested that the Akepa seemed to be in family groups. The next day the weather cleared beautifully, for one of the few days each year in which rainy

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Mt. Waialeale, off across the ohia woodlands of the Alakai Swamp, could be seen all day. I hiked through the boggy meadows and patchy woodlands of the Swamp, adding Creepers to the five other honeycreepers. The Creepers did chip a little, as Munro reported, but only at me. I began to wonder if the other birds Munro had seen with them had just come to the chipping at him.

The first two Creepers I saw were in a bird flock with an Anianiau and two Amakihi plus an Elepaio, but the flock seemed to dissipate like clouds over Kaumahina as I watched. The rest of the Creepers were paired, but were wandering apart from other species. At no time did the fairly numerous Akepa of the canopy join them, and I wondered how they could do so when the Creepers seemed to stay so low and Akepa so high. Alas, I saw none of the rare Nukupuu and Akaialoa that Munro thought joined such flocks.

At places like Volcano House, Puu Ulaau, Kipahulu, Kokee, and the Alakai we saw hundreds of Hawaiian honeycreepers of eight species. The general impression we had is that they are abundant compared to tropical birds in Panama, that they scatter all over the place, and that they wander singly, in pairs, or in small groups. Practically none were in definite mixed flocks, except in a few flowering trees. The few mixed flocks we saw could almost be explained by random movement or by temporary attraction to outside things like my squeaking. The honeycreepers mostly seemed to lack alarm calls, although the chipping of Creepers was a definite antipredator noise connected mainly with danger to young birds.

So, our preliminary study suggests that lack of predators leads to lack of alarm calls and to few or no mixed flocks on Hawaii; do mixed flocks elsewhere form to watch out for predators? Before we can conclude this we need to look for other possibilities. My wife and I were only able to spend ten days (14-23 September 1971) looking for mixed flocks on Hawaii. Perhaps there are bird flocks at some other season, even though we went in a nonbreeding month, when mixed flocks are usually best in other parts of the world. Perhaps we did not get far enough into the forests to see mixed flocks in which rare Nukupuu and Akaialoa might play a part.

Even if mixed flocks are rare on Hawaii, it might be that they are rare for some reason other than lack of predators. Island birds are typically few in numbers of species but high in numbers of individuals compared to mainland areas, and Hawaii is no exception. Island trees and insects are similarly low in numbers of species and high in numbers of individuals compared to mainland trees and

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Table 1. a-e - a, 10 percent, b, 20 percent, up to e, 50 percent with mixed flocks. f-14 to 23 September 1971. Nonpasserines and birds of open country not included. Some birds of open country, such as Black-headed Mannikins and Strawberry Finches, do form mixed flocks.

Birds	Number of Birds Seen and Percent in Mixed Flocks, by locality (f)														Total	% Mixed			
	Hawaii	Volcano House	Thurston Tube	Pohakuloa	Puu Ulaau	Mlie 22	Mlie 31	Mau	Pailku	Kipahulu	Kaupo Gap	Oahu	Makiki	Kauai			Kokee	Kaunahina	Alakai
Native Species																			
Turdidae			3			6												9	0
Omao																			
Muscicapidae																			
Elepaio					50	2							1	5			6 ^b	64	2
Drepanididae																			
Anahiti													2	16		8	5 ^b	214	2
Anianiau														18		5	15 ^a	38	3
Creepers																	10 ^b	25	8
Akepa																3	10	13	0
Akapolaau																		0	0
Pallia					1													0	0
Apapane					4													4	0
Iiwi					15	15			1	40				27		50	40	363	0
					8	15			10	10				8		1	5	48	0
Introduced Species																			
Zosteropidae																			
White-eye																			
Timaliidae																			
Hwa-mei																			
Leiorthix																			
Turdidae																			
Shama																			
Pycnonotidae																			
Bulbul, Red-vented																			
Fringillidae																			
Cardinal																			
Finch, House																			
Phoebe																			
Sparrow, House																			
Estrildidae																			
Waxbill (sp.)																			

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insects. The lack of similarly foraging bird species on islands could lead to lack of flocking. The high numbers of individual birds and of food sources of a few types could remove any necessity for a bird to join others to search for rare food. Perhaps we should look at other islands, ones with predators, to see if there are mixed flocks on those islands.

Moreover, the Hawaiian honeycreepers are peculiar birds, not very diverse despite their diversity. Many of them, both birds with straight and long curved beaks, feed on nectar from the common ohia flowers. Most of them are treetop birds, except the Creepers and a few rare species. It might be that they come from nonflocking ancestors, or that their nectar and fruit-eating habits force them not to be sociable. This is not true of other fruit-eating birds, for Moynihan (1962) found fruit-eating honeycreepers do form mixed flocks in Panama; and I have repeatedly seen such flocks in the Amazon. However, more study is needed, both on Hawaii and in other areas, to see if absence of predation causes a lack of mixed flocks.

SUMMARY

Mixed flocks seemed rare among native land birds on Hawaii. The absence of native predators may have allowed birds to wander separately.

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FALL MIGRATION OF COMMON PASSERINES AT BOLINAS, CALIFORNIA

Robert M. Stewart

INTRODUCTION

Only McCaskie and Banks (1964) have reported continuous observations at a single station during migration in California. I report here the capture of three common summer resident and four winter resident species during fall 1969 to 1971 at Bolinas, Marin County, California. There is often no direct correlation between the number of birds on the ground and the timing of migration. However, because of the paucity of information about passerine migration in California, I offer these data because they suggest the general timing of common migrants for a three-year period at one location.

METHODS

28 mist nets were run during 90 per cent of the possible days between 16 August and 15 November 1969-1971. The dominant tree species near 85 per cent of the net sites was Coast Live Oak (*Quercus agrifolia*). The remaining net sites (15%) were in disturbed coastal scrub where the dominant plant, Coyote Bush (*Baccharis pilularis*), was interspersed with grass. Net sites remained the same during each fall. Only unbanded birds caught in nets were included in this analysis.

RESULTS

The number of Western Flycatchers (*Empidonax difficilis*), Warbling Vireos (*Vireo gilvus*), and Swainson's Thrushes (*Hylocichla ustulata*) captured per 1000 net hours are shown in Table 1. Although there is some yearly variation in capture of these species, some generalizations concerning the timing of migration is warranted. The peak five-day period for the Western Flycatcher during all three years was 1-5 September; however, substantial movement occurred during ten days before and after this time. During the three year period, the Warbling Vireo was most abundant from 6-15 September. Swainson's Thrush is apparently more variable, but peak capture for the three years fell between 6 and 15 September. Capture of these

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Table 1. Capture of common summer residents at Point Reyes Bird Observatory 1969-1971. Squares surround the five-day period in which peak capture occurred for each species during each year.

		Western Flycatcher			Warbling Vireo			Swainson's Thrush		
		69	70	71	69	70	71	69	70	71
Aug.	16-20	6	20	9	3	4	0	1	1	7
	21-25	35	25	17	7	2	8	2	6	21
	26-31	32	20	24	9	3	6	5	13	7
Sept.	1-5	36	72	40	3	9	20	5	18	6
	6-10	21	37	39	8	44	51	11	19	10
	11-15	15	64	23	2	2	61	4	11	22
	16-20	8	12	31	4	7	19	5	0	11
	21-25	6	20	10	5	6	4	7	0	0
	26-30	4	11	25	2	2	3	5	3	7
	31									
Oct.	1-5	4	1	21	1	0	21	0	3	12
	6-10	2	6	2	0	0	3	0	1	5
	11-15	2	0	0	0	0	3	1	0	3

species in 1971 differed from the two previous years in that in 1971 there was a small second peak for the Warbling Vireo and the Swainson's Thrush during 1-5 October and for the Western Flycatcher between 26 September and 5 October.

The number of Hermit Thrushes (*Hylocichla guttata*), Ruby-crowned Kinglets (*Regulus calendula*), Puget-Sound White-crowned Sparrows (*Zonotrichia leucophrys pugetensis*), and Golden-crowned Sparrows (*Zonotrichia atricapilla*) per 1000 net hours is shown in Table 2. Peak capture of the Hermit Thrush, White-crowned Sparrow and Golden-crowned Sparrow occurred between 1-15 October, while the Ruby-crowned Kinglet peaks occurred between 16-31 October.

Comparing what is known about the timing of fall migration in Alaska for the White-crowned Sparrow and the Golden-crowned Sparrow suggests that these species begin peak migration there approximately two months before reaching central California. Gambel's White-crowned Sparrow (*Z. l. gambelii*) has been observed to peak from 6-10 August in Alaska (DeWolf, B. B. in *Bent*, 1968, p. 1330) and to be most numerous in eastern Washington from 10-30 September (King, Farmer and Mewaldt, 1965, p. 493). Data is not shown for *gambelii* at Bolinas because it is not an abundant migrant

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Table 2. Capture of common winter resident species at Point Reyes Bird Observatory 1969-1971. Squares surround the five-day period in which peak capture occurred for each species during each year.

	Hermit Thrush			Ruby-cr. Kinglet			White-cr. Sparrow			Golden-cr. Sparrow		
	69	70	71	69	70	71	69	70	71	69	70	71
Sept. 1-5	0	0	0	0	0	0	1	0	0	0	0	0
6-10	1	1	0	0	0	0	1	2	0	0	1	0
11-15	0	1	0	0	0	0	5	6	3	0	1	0
16-20	0	1	0	0	0	0	3	3	1	1	0	0
21-25	11	20	0	1	1	0	17	58	0	16	12	0
26-30	12	30	2	1	6	0	14	37	11	10	18	4
Oct. 1-5	31	<u>51</u>	27	3	6	8	22	47	<u>35</u>	14	5	<u>24</u>
6-10	24	50	<u>53</u>	4	36	15	7	<u>60</u>	23	5	<u>42</u>	14
11-15	<u>37</u>	43	45	20	16	35	<u>42</u>	9	31	<u>42</u>	5	12
16-20	21	16	28	<u>28</u>	22	<u>50</u>	7	4	21	9	6	11
21-25	14	30	37	16	34	<u>50</u>	8	0	8	7	10	21
26-31	16	42	17	9	<u>44</u>	46	4	10	8	3	12	8
Nov. 1-5	4	34	11	2	24	7	1	12	6	4	0	3
6-10	7	15	14	4	28	14	0	0	0	2	4	3
11-15	7	11	—	5	16	—	1	0	—	2	3	—

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there, but it arrives virtually at the same time as *pugetensis*. Observations of the Golden-crowned Sparrow in Alaska suggest that they leave the vicinity of Anchorage in late July and early August (F.S.L. Williamson in *Bent*, 1968, p. 1362). In Washington the peak movement has been observed to be 10-30 September (Jewett, et. al. 1953, p. 651).

More information on the timing of migration is needed at different locations in California, in other western states, Canada and Alaska.

ACKNOWLEDGEMENTS

I would like to thank the following people for help in collecting data in the field: W. Clow, K. Darling, R. Ferris, J. Frizzell, V. Frizzell, N. Johannesma, S. Johannesma, T. J. Lewis, E. Meyers, R. Scheible, and C. Scheible.

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NOTES

AN EXTENDED SOJOURN AND A STATE RECORD OF A WANDERING TATTLER IN ARIZONA

A Wandering Tattler (*Heteroscelus incanum*), previously unrecorded from Arizona, was continuously present at the Phoenix 35th Avenue sewage treatment ponds from 18 September through 9 October 1971. First observed by Bonnie Burch, it was thereafter encountered daily. During this lengthy stay at these ponds, most of the active birdwatchers in the state had the opportunity and pleasure of observing this rarity. At all times the bird was noted to be healthy, alert, and vigorous in flight. It fed daily from the abundant animal and insect matter present along the rocky shoreline. On taking flight it frequently gave an emphatic ringing five note call, not unlike that of the yellowlegs (*Totanus* sp.). Color photographs taken by the author are on file in the Ornithology Departments of the University of Arizona and Prescott College. The following field marks were obtained from these photographs:

Upperparts: forehead, crown, nape, back, and rump, dark brownish gray; bold white superciliary line, shading to dull gray-white behind the eye, and extending almost to the nape; prominent very dark gray eyeline below the superciliary line running from the bill to the eye, and continuing behind the eye as a less dark line terminating at the nape; eye-rings present. Wings and tail: wings and tail unmarked and a uniform dark gray tinged with brown. Underparts: breast and flanks, medium gray tinged with brown and shading to white on the chin, throat, belly, and undertail coverts; cheeks, medium gray shading to white on the throat. Soft parts: bill straight, dark, and rather heavy; eye dark; legs and feet, orange-yellow.

As there were no flight photographs taken of the bird, it was worthy of note that the uniform dark coloration of the wings, rump, and tail were seen by all observers. The bird appeared one-third larger in size than the Spotted Sandpipers (*Actitis macularia*) which were frequently in association with it. Also it had the same habit of teetering, though not as often. Being wary, the bird was best observed through a telescope from a distance or from a car parked for some time on the levee above the pond.

It is well known that most North American records of the Wandering Tattler are from the Pacific Coast. The following 13 records are exceptions to this rule. Far to the east, one was seen at Port Colborne, Ontario, on 1 August 1948 (Beardslee and Mitchell, 1965), one was at Windmill Point, Ontario, on 12-15 July 1960 (Burton and Woodford, 1960), and one was observed at Monomoy, Massachusetts, on 25-30 May 1968 (Emery and Woodruff 1968). To the south of the Tattler's breeding range, a specimen was taken at Swan Lake, British Columbia (Cowan, 1939); this is the same record attributed to Tupper Creek in the A.O.U. Check-List of North American Birds (American Ornithologists' Union, 1957). There are two sight records from Alberta, one from Patricia Lake in Jasper National Park, 2 July 1961 (Salt and Wilk, 1966), and one from a lake a few miles northwest of Edmonton, June 1965 (Salt and Wilk, 1966). One was seen near the British Columbia - Alberta border west of Banff on 18

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August 1960 (Rogers, 1960). Farther south, a specimen was taken at Crater Lake, Oregon, on 27 July 1882 (Gabrielson and Jewett, 1940) and another is reported from Salton River, Baja California in Mexico (American Ornithologists' Union, 1957). The Salton Sea of California has produced four separate sightings involving seven individuals: one on 31 August 1961 (McCaskie, 1970), one on 11 May 1969 (McCaskie, 1969), four on 8 May 1971 with one remaining the following day (McCaskie, 1971), and one on 12 August 1971 (McCaskie, 1971a).

The longest layover time noted for any of the above birds was the six days for the Monomoy bird. This is brief compared to the 21 day sojourn of the Phoenix individual, and attests to the abundant food supply of the Phoenix sewage treatment ponds, and perhaps to the climatic similarity of Phoenix to the bird's wintering grounds. Also there is much similarity between the rocky shoreline of the Phoenix ponds and the Tattler's coastal shoreline haunts. Wandering Tattlers are occasionally found wintering as far north in the Gulf of California as Puerto Penasco, Sonora (Alden, 1969), just two hundred miles southwest of Phoenix.

ACKNOWLEDGEMENTS

I am grateful for the assistance given by W. Earl Godfrey, Guy McCaskie, Gale Monson, and Thomas Rogers in reviewing the literature.



FIGURE 1. A Wandering Tattler that remained in Phoenix, Arizona from 18 September to 9 October 1971.

Photo by Robert A. Witzeman

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- Robert A. Witzeman, 4619 East Arcadia Lane, Phoenix, Arizona 85018.

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A RECORD OF THE LUCIFER HUMMINGBIRD IN ARIZONA

The Lucifer Hummingbird (*Calothorax lucifer*) is found from the S. W. United States south to Chiapas, Mexico (Davis, 1972). Records of the Lucifer Hummingbird from Arizona include two old specimens from the 1800's (Phillips, 1964), three sightings during the spring of 1971 (American Birds 25:4:782), and two more sightings for that summer (American Birds 25:5:890).

On 14 July 1971 while watching birds at the feeders in Guadalupe Canyon, Cochise County, I saw a hummingbird with buffy underparts and a decurved bill. It proved to be a Lucifer Hummingbird and was seen several times during the day and photographed (Fig. 1). Color slides are on file at the University of Arizona in Tucson and at the San Diego Natural History Museum in San Diego.



FIGURE 1. A female plumaged Lucifer Hummingbird at a feeder in Guadalupe Canyon, Arizona, on 14 July 1971.

Photo by Alan B. Myerfeld

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Alan B. Myerfeld, 14381 Caminata Soleado, San Diego, California 92129.

TWO FALL YELLOW-THROATED WARBLERS IN CALIFORNIA

On 14 October 1969 I mistnetted a Yellow-throated Warbler (*Dendroica dominica*) in my yard on Point Loma, San Diego. The bird was weighed (8.9 gm.) and measured (wing, 62 mm; tail 42 mm; culmen 14.1 mm); further examination by A. M. Craig revealed a trace of subcutaneous fat and an incompletely ossified skull. Sex was not determined. Before its release the bird was photographed (Fig. 1. Color transparency deposited in the San Diego Natural History Museum) and described by Guy McCaskie; the following is adapted from his notes:

Upperparts: top of head and back uniform gray with a very slight hint of olive showing on the tips of the feathers. A black line extends across the forehead and above the superciliary stripe, merging into the gray of the head. Supercilium yellow from the bill to the eye and white from the eye to where it ends about ¼ inch behind the eye. White half eye ring below the eye. Face and ear coverts dark gray merging into black toward the back of the ear coverts. The black continues as a border along the sides of the throat and breast and merges into the blackish streaking along the flanks. A narrow white area at the sides of the neck, directly behind the ear coverts. Underparts: Throat and upper breast bright yellow, bordered with black; belly and undertail coverts white, washed with brown, the flanks streaked with black and quite strongly washed with buffy brown. Wings and tail: Dark gray, the feathers edged with a paler gray; the ends of the upper wing coverts white, giving distinct double wing bars. A sub-terminal white spot present on the inner webs of the two outer-most rectrices. Bill black, legs and feet yellowish brown.

McCaskie thought that in the field it somewhat resembled a fall plumaged Grace's Warbler (*Dendroica graciae*) except that the yellow of the throat and upper breast was much more intense and was boldly framed with black which extended to the flanks. In addition, the white area on the sides of the neck, quite noticeable on this bird, would not have been present on a Grace's Warbler. It appeared to have the same size and posture as a Townsend's Warbler (*Dendroica townsendi*).

This bird remained in the vicinity for at least 22 days and was observed by several people during this period.

The identification to race of individual birds far out of range is usually somewhat speculative at best. However, the three generally recognized races of the Yellow-throated Warbler are of two fairly distinctive types, the white-lored, short-billed *albilora* (Sycamore Warbler) and the yellow-lored, long billed *dominica* and *stoddardi*. The Point Loma bird is certainly not *albilora* because of the yellow in the anterior portion of the supercilium and the length of the bill. Ridgway (1902) gives measurements of 10.9 - 12.7 for the bill of *D. d. albilora* and 12.4 - 15 for that of *dominica* (this bird 14.1). This individual is almost certainly referable to *dominica* although *stoddardi* cannot be entirely excluded since the culmen length is within the range of this race (14 - 17 mm, Sutton, 1951). Dr. Sutton has examined the photographs and measurements and also thinks the bird is most likely *dominica*.

On 21 September 1969 L. C. Binford and others found a Yellow-throated Warbler in the Carmel River Valley, Monterey County, California (Baldrige, et al., 1970). It, too, was observed by many people and remained for several days. This bird could not be identified to race, according to Binford (pers. comm.) because it was not possible to accurately judge the key characters in the field.

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The yellow-lored form, *dominica*, breeds from the Appalachians east and from eastern Maryland south to north central Florida. The breeding range of *albilora* extends westward from that of *dominica* to central Oklahoma, Missouri and northern Ohio, and south to east Texas and southeastern Mississippi. *Stoddardi* occupies a very restricted breeding range in northwestern Florida (Griscom and Sprunt, 1957). *Dominica* winters from South Carolina, Georgia and Florida to the Caribbean Islands while *albilora* migrates to Mexico, west to Nayarit, Colima and Guerrero, (Miller, et al., 1957) and Central America south to Costa Rica. There is an August record for Clipperton Island, 600 miles southwest of Guerrero (Stager, 1964). The winter range of *stoddardi* is unknown. (Griscom and Sprunt, 1957).

The Point Loma record appears to be the first of a yellow-lored *D. dominica* in California and the south-western United States. A spring vagrant of the white-lored *D. d. albilora* has been caught on the Farallon Islands on 8 July 1969 (Chandik and Baldrige, 1969).

I wish to thank George M. Sutton, Guy McCaskie, L. C. Binford, Alan M. Craig, and Pierre Devillers for their assistance in the preparation of this note.



FIGURE 1. A Yellow-throated Warbler (*Dendroica dominica dominica*) banded on Point Loma, San Diego County, on 15 October 1969.

Photo by Alan M. Craig

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- Jean T. Craig, 4754 Del Mar Avenue, San Diego, California 92107.

A LOUISIANA HERON IN NORTHEASTERN CALIFORNIA

On 24 August 1971 John Revill, then a seasonal aide at Honey Lake State Wildfowl Management Area, Lassen County, found an adult plumaged Louisiana Heron (*Hydranassa tricolor*) at Hartson Reservoir on the Dakin Unit of the area, near the northwest corner of Honey Lake. By carefully stalking the bird on his hands and knees, he was able to obtain the accompanying photograph (Fig. 1).

On 27 August 1971 Rich Stallcup, Anne and Georgianne Manolis and I observed the heron at the same location, standing on the shore of the reservoir in association with Snowy Egrets (*Leucophoyx thula*). The bird was quite wary, flying to the opposite side of the reservoir when we first approached it. We eventually managed to get within 100 yards of the bird, and were able to study it carefully for some time. Basically, the upperparts, including the sides of the neck and breast, were slaty blue with buffy aigrettes extending from the middle of the back to the tail, and a tuft of white aigrettes extending out from the nape. The rest of the underparts were white, as were the wing linings, which contrasted with the dark flight feathers when the bird was on the wing. The legs were greenish and the bill was grayish, becoming darker at its tip. The heron was approximately the same size as the nearby Snowy Egrets. The bird remained in the area until at least 26 September 1971, spending its time both at Hartson Reservoir and on the nearby Fleming Unit of the Management area (John Revill, pers. comm.).

This is the first record of Louisiana Heron anywhere in northern California. The species is a rare but regular winter visitor along the southern California coast as far north as Los Angeles County (McCaskie, 1970a), occurring casually as far north as Santa Barbara County (McCaskie and Pugh, 1964). It has been recorded at the Salton Sea twice, once in spring (McCaskie, 1967) and once in winter (McCaskie, 1970b). In addition, there are two fall records for the Colorado River along the California-Arizona border (Monson, 1955 and 1956). Elsewhere in the western United States, the Louisiana Heron has wandered once to Oregon, an immature collected at Malheur National Wildlife Refuge on 31 October 1943 (Scharff, 1944); four times to Colorado, twice in the spring and twice in late summer, both of the late summer records being in 1971 (Hugh Kingery, pers. comm.); and there are hypothetical sight records for Nevada in late fall (Grater, 1939) and Utah in spring (Kingery, pers. comm.). Phillips, Marshall and Monson (1964) list 4 fall records for Arizona, and there are two recent sight records for that state, one in fall (Monson, 1957a) and one in late summer (Snider, 1971). Ligon (1961) lists three hypothetical records for New Mexico, and there have been three more recent sightings, one in spring (Snider, 1969), one in summer (Monson, 1957b) and one in fall (Monson, 1961). The only New Mexico specimen seems to be one taken near Carlsbad, Eddy County on 25 August 1962 (Zimmerman, 1963). Since 1966, there have been two spring (Snider, 1969 and 1970) and two fall (Snider, 1967 and 1968) records for the west Texas panhandle, all at Big Bend National Park.

There are two general sources of possible origin for vagrant Louisiana Herons in the western states — breeding colonies on the west coast of Mexico and breeding colonies along the Gulf of Mexico. The most obvious, and I believe, most probable source of origin for Great Basin records is the west coast of Mexico, with individuals wandering north to the Salton Sea or the Colorado River, and occasionally going even farther north, to show up in the scattered marshes and alkali lakes of the Great Basin. This would account for the Honey Lake and Malheur records.

The possibility that these records are of birds that have wandered from the

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Gulf of Mexico cannot be ruled out entirely, however. The Colorado, west Texas, New Mexico, and perhaps even some of the Arizona records, are quite likely of birds that wandered northwestward from the Gulf of Mexico. The west Texas and New Mexico records are all concentrated in the vicinity of either the Rio Grande or Pecos rivers, indicating a possible path these wanderers have followed. If such vagrants as these were to continue in a northwesterly direction from New Mexico, they could eventually show up in northeastern California or southeastern Oregon.

ACKNOWLEDGEMENTS

I wish to thank John Revill for supplying an excellent photograph and information concerning the Honey Lake record, and Hugh Kingery and Gale Monson for supplying very helpful information concerning records for the central Rocky Mountain and Great Basin Region and the Southwest Region, respectively, of American Birds.



FIGURE 1. Louisiana Heron (*Hydranassa tricolor*) standing on the shore of Hartson Reservoir, Lassen County, on 24 August 1971. Photo by John Revill

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- Tim Manolis, 4409 44th Avenue, Sacramento, California 95824.*

THE PRESENT STATUS OF THE NORTHWESTERN RACE OF THE ROBIN IN CALIFORNIA

The 5th edition (1957) of the A.O.U. Check-List of North American Birds states that the northwestern race of the Robin (*Turdus migratorius caurinus*) breeds from southeastern Alaska to northwestern Oregon and winters south to central western California (Point Reyes, San Geronimo). As far as California is concerned, essentially the same information appears in The Distribution of the Birds of California (Grinnell and Miller, 1944), although the additional statement is made that *caurinus* is a "rare winter visitant to the northern coastal section of state." Ned K. Johnson (personal correspondence) advises me that the Museum of Vertebrate Zoology at Berkeley contains two specimens of *caurinus* taken farther south in California: a male from Santa Cruz, Santa Cruz County, collected 20 December 1939, and a female from Cottonwood Spring, Riverside County, collected 23 October 1945. There appear to be no other records for this well-marked race, which has been considered largely resident within its breeding range.

My first winter at Monterey, Monterey County, 1969-70, I found Robins present in what was probably normal numbers. Occasional small flocks were encountered, but they were by no means abundant, and the few specimens taken were all typical of *propinquus*. The following winter was quite different. In late November small flocks began to appear in the open fields and pastures, and within a few weeks they were everywhere. At the height of their abundance flocks totalling fully 2000 birds were noted in the course of a morning, and it was not until early February that there was a noticeable decrease in their numbers. These flocks were not difficult to approach, and I was at once impressed by the dark coloration, both above and below, of the birds I studied with binoculars. An occasional individual was collected, and left me in no doubt that I was witnessing what was possibly an unusual invasion of the supposedly largely resident Robins of the Pacific Northwest. These specimens, taken between the dates of 26 November 1970 and 21 March 1971, were sent to the National Museum, Washington, D. C., and their identification as *caurinus* was confirmed by Mrs. Roxie C. Laybourne, Zoologist with the Fish and Wildlife Service.

It is not improbable that invasions such as this have occurred in past years, and will occur again. The average collector would have little or no interest in flocks of Robins present during the winter months, so *caurinus* could easily go undetected even though relatively abundant. I feel, however, that it should no longer be considered "a rare winter visitant" in California. Thomas D. Burleigh, 1242 Sylvan Road, Monterey, California.

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RED-HEADED WOODPECKER IN THE IMPERIAL VALLEY OF CALIFORNIA

On 17 July 1971 Alfred T. Driscoll and his son found a Red-headed Woodpecker (*Melanerpes erythrocephalus*) in a row of Eucalyptus trees on the Wister Fish and Game Wildlife Management Area northwest of Niland, Imperial County, California. On 31 July the Driscolls again observed the bird in the same row of trees, this time taking several identifiable pictures, and on 7 August the authors, accompanied by their sons and several others, again observed the woodpecker in the same area. This time Steven Cardiff obtained several photographs using a 500 mm. lens and Kodachrome II film (Figure 1).

This woodpecker was seen actively flycatching for insects in the air and was also observed flying down to the ground to feed. Otherwise it spent most of its time in the Eucalyptus trees, but occasionally flew to some nearby Tamerisk trees and was also observed in a Mesquite tree for a short time. This individual was brightly colored; it lacked any black between the red of the head and neck and the white of the breast, so was probably an adult male. The feathers showed very little wear for this date, and none of the type of wear one would expect on a caged bird. This bird was last seen on 22 August 1971.

This is the first report of a live Red-headed Woodpecker in the state of California. There is a report of a mummified bird found along a road in La Puente, Los Angeles County, on 20 May 1962 (David G. Marqua, Condor



FIGURE 1. An adult Red-headed Woodpecker near Niland, Imperial County, California, on 7 August 1971. The bird was present from at least 17 July to 22 August 1971.

Photos by Steven Cardiff

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65:332, 1963), but this bird could have been brought into the state lodged in the front of a vehicle. The closest Red-headed Woodpecker record to this area is one taken in the Chiricahua Mountains of Arizona "about June 1894" by W. W. Price (Birds of Arizona, Phillips, Marshall, and Monson, 1964). It is possible that the Chiricahua Mountain and Imperial County birds wandered off course during the spring migration. *Eugene A. Cardiff, San Bernardino County Museum, Bloomington, California 92316, and Alfred T. Driscoll, 5550 Electric Ave., San Bernardino, California 92407.*

CORRECTION

The last issue of *California Birds* "Interbreeding of the Glaucous-winged Gull and Western Gull in the Pacific northwest" 2(4):129-133, contained a typographical error on page 129, paragraph three, eleventh line. The word "south" should be substituted for the word "sound".

The editors regret this error.

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Rare bird reports should be sent to Jon Winter, Secretary, Rare Bird Committee, Point Reyes Bird Observatory, Mesa Rd., Bolinas, California 94924.

Layout and cover design by Virginia P. Johnson